

CLAIMS

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1. A method for optimizing the best resolution of an optical scanning device, said method [?] employed in assembling processes for enabling an assembling technician to find the best resolution, said optical scanning device including at least an image capturing device, a lens and a document glass, with support of a calibration device and an adjusting device, said method comprising the steps of:

(1) fixing said image capturing device and said document glass in a predetermined position, said lens is movable between said image capturing device and said document glass;

(2) placing said calibration device on said document glass and connecting said adjusting device to said image capturing device;

(3) reading values of a right side horizontal MTF, a right side vertical MTF, a left side horizontal MTF and a left side vertical MTF from said adjusting device;

(4) calculating the values of said right side horizontal MTF, said right side vertical MTF, said left side horizontal MTF and said left side vertical MTF to generate a referencing parameter, wherein said referencing parameter is displayed in order to inform said assembling technician; and

2. (5) adjusting the position of said lens, when the value of said referencing parameter achieving a relative big value, fixing said lens.

2. The method of claim 1, wherein the step (4) of generating, said referencing parameter is the sum of the values of said right side horizontal MTF, said right side vertical MTF, said left side horizontal MTF and said left side vertical MTF.

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say

3. The method of claim 1, wherein the step (4) of generating, said referencing
parameter is the difference between a value of a balance MTF and the sum of
the values of said right side horizontal MTF, said right side vertical MTF, said
left side horizontal MTF and said left side vertical MTF.

4. The method of claim 3, wherein the value of said balance MTF is the sum
of the absolute value of left side horizontal MTF minus the right side
horizontal MTF and the absolute value of left side vertical MTF minus the
right side vertical MTF.

5. The method of claim 3, wherein the value of said balance MTF is the sum
of the absolute value of left side horizontal MTF minus the right side vertical
MTF and the absolute value of left side vertical MTF minus the right side
horizontal MTF.

6. The method of claim 3, wherein the value of said balance MTF is the sum
of the absolute value of left side horizontal MTF minus the right side
horizontal MTF, the absolute value of left side vertical MTF minus the right
side vertical MTF, the absolute value of left side horizontal MTF minus the
right side vertical MTF and the absolute value of left side vertical MTF minus
the right side horizontal MTF.

7. The method of claim 1, wherein the step (4) of displaying, said adjusting
device further comprising a display for display said referencing parameter.

8. The method of claim 7, wherein said display is digital type for displaying
said referencing parameter.

1 10. The method of claim 1, wherein said image capturing device is a charged-
2 coupled device.

1 11. An apparatus for optimizing the best resolution of an optical scanning
2 device, said optical scanning device including an image capturing device, a
3 lens, a document glass and conveying device, said conveying device able to
4 move said image capturing device, said apparatus comprising:

5 a calibration device, placed on said document glass, said calibration
6 device containing at least four prints, such as a right side horizontal
7 calibration print, a right side vertical calibration print, a left side horizontal
8 calibration print and a left said vertical calibration print.

1 12. The apparatus of claim 11, further comprising:

an adjusting device, connected to said image capturing device, for
receiving image signals of said image capturing device, calculating relative
MTF values, and generating a referencing parameter.

1 13. The apparatus of claim 11, wherein said right side horizontal calibration
2 print is positioned on the right side of said calibration device, and contains a
3 plurality of parallel lines which are perpendicular to the horizontal direction.

14. The apparatus of claim 11, wherein said right side vertical calibration
print is positioned on the right side of said calibration device, and contains a
plurality of parallel lines which are inclined with the horizontal direction by a
predetermined angle.

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